

3 transmitting, by a mobile station, in each frame, a sequence of about 16 secondary
4 synchronization codes, said secondary synchronization codes comprising $\text{Log}_2(N_{\text{ssc_seq}})$ bits
5 of information to be used to obtain a long code indication; and
6 modulating said secondary synchronization code by one of N_{mod} valid
7 sequences.

1 28. (Amended) The method of claim 27, wherein said sequence of about 16
2 secondary synchronization codes repeats in each frame.

Please add the following new claims:

Sub 15 -- 33. A method for facilitating cell searches in a cellular communications system,
2 comprising the step of:
3 a base station transmitting at least one code word included in an identifying code
4 set, said identifying code set comprising a plurality of code words each including a plurality of
5 symbols taken from a set of short codes, each code word of said plurality of code words defined
6 such that no symbol-wise cyclic shift of said each code word produces a valid code word.

1 34. The method of Claim 33, wherein said plurality of code words comprises a
2 plurality of Q-ary code words, and said set of short codes comprises a set of Q short codes.

1 35. The method of Claim 34, wherein said plurality of Q-ary code words
2 comprises a plurality of length M Q-ary code symbols.

1 36. The method of Claim 33, wherein said identifying code is formed by
2 concatenating an inner and outer code.

1 37. The method of Claim 36, wherein said inner code comprises a tailbiting trellis
2 code.

1 38. The method of Claim 36, wherein said outer code comprises a binary code.

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1 39. The method of Claim 37, wherein said tailbiting trellis code comprises an
2 orthogonal trellis code.

1 40. The method of Claim 37, wherein said tailbiting trellis code comprises a
2 superorthogonal trellis code.

1 41. The method of Claim 34, wherein the short codes within the set of Q short codes
2 are orthogonal short codes.

1 42. A method for a mobile station to decode an identifying code transmitted from a
2 base station in a CDMA cellular communications system, comprising the steps of:

3 collecting k times M consecutive symbols, said M consecutive symbols
4 comprising said identifying code;

5 calculating a combined likelihood value for said collected k times M consecutive
6 symbols, thereby producing a set of M consecutive symbols;

7 computing a correlation between each of L code words and each of M cyclic
8 shifts of said set of M combined likelihood values; and

9 storing a code word and number of cyclical shifts made that produced a highest
10 amount of correlation in the computing step.

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1 43. The method of Claim 42, wherein said number of cyclical shifts made indicate a
2 frame timing for said identifying code.

1 44. The method of Claim 42, further comprising the step of outputting an identity of
2 said stored code word.

1 45. A method for a mobile station to decode an identifying code transmitted from a
2 base station in a CDMA cellular communications system, comprising the steps of:

3 collecting k times M consecutive symbols, said M consecutive symbols
4 comprising said identifying code;

5 calculating a combined likelihood value for said collected k times M consecutive
6 symbols, thereby producing a set of M consecutive symbols;

7 computing a correlation between said set of M combined likelihood values and
8 each of M cyclic shifts of said L code words; and